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ORIGINAL ARTICLE

Trends of the history of mathematics education in Brazil

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Abstract The text aims at characterizing and analyzing the production of the history of mathematics education in Brazil. The study takes the presentations from the last National Seminar of History of Mathematics as a starting point. Such event gathered researchers, in a more significant and comprising way, interested in historical studies of mathematics and its teaching. The characterization points at the existence of four different tendencies: a production that considers the studies about history of mathematics education as part of the research about history of mathematics; a trend of opinions that takes into account the pedagogical use of history in mathematics education and establishes conditions for the research in the history of mathematics education; studies that use oral history for mathematics teachers' training courses; and, finally, another trend that treats the history of mathematics education as history, that means, a specificity of historical production, having the mathematics education as an object. It will be shown that the characterization of those trends reveals different ways of representing the past of mathematics education, as well as the relationships Brazilian researches keep with international studies about this subject.

Keywords History of mathematics education · History of mathematics · Oral history

1 Introduction

By reading and thorough analysis of the *Proceedings* from the last National Seminar of the History of Mathematics,[1] we started a characterization of what we could call different trends, considering the *history of mathematics education* in Brazil nowadays. Far from thinking of an analytical inventory that could accommodate the immense amount of works, which have been written in Brazil over the subject nowadays, the separation from the several tendencies must be read as one of the possible systematizations of the different ways of thinking the production in the history of mathematics education. Its organization comes, above all, from Brazilian research groups, which in the last 10 years have been organizing discussion sessions, through which theses and dissertations have been oriented; books have been published, *papers*, among other productions. In this sense, it was possible for us to cast the following trends of thoughts: a production that sees the history of mathematics education as a subset of the history of mathematics; a second trend self-proclaimed "history in mathematics education"; a third group that states itself in the relation "oral history and mathematics education"; and, at last, works that consider history of mathematics education as a specificity of the history of education.

Beyond the characterization of the trends of the history in mathematics education, we intended to show that the fundamental distinction between them points to the modes used to represent the past of mathematics education.[2]

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[1] The VII SNHM occurred in 2007, in Guarapuava, State of Paraná, Brazil. The seminar is promoted every 2 years by the Brazilian society of history of mathematics and can be considered as the event that has the most representativeness in the meeting with researchers who are interested in historical studies that involve mathematics and its teaching.

[2] It may be convenient to highlight that we distinguish "mathematics education" from "Mathematics Education". This last one represents a relatively recent field in the research about the processes concerning teaching–learning of mathematics. The first one takes into account the teaching of mathematics since immemorial times.

Sometimes, these different representations seem to be heirs of international studies.

2 The history of mathematics education as history of mathematics

As professor Ubiratan D'Ambrosio reminds in his book "A concise history of mathematics in Brazil", dated from 1971, the creation of the *ICHM/International commission of history of mathematics*, in the ambit of the *International commission of history and philosophy of science*, was incorporated to the *IMU/International mathematics union* in 1974, as one of its specialized committees (D'Ambrosio, 2008, p. 64). Brought from the initial ambit of the history of sciences, the history of mathematics will then start to have an institutional place at the core of the IMU. Like that, it may be possible to say that the studies about the history of mathematics education, considered as part of the history of mathematics, date from the creation of the historical mathematics research studies, carried out as a specificity of mathematics itself.

In Brazil, it is possible to analyze, more recently, the characterization of the studies about the history of mathematics education, taken as a pertaining part of researches about the history of mathematics, considering the work of Professor Sérgio Nobre, editor of the *Revista Brasileira de História da Matemática*, in his participation in a round table discussion at the VII SNHM. There, this author considers that:

> The international movement of scientific investigation in history of mathematics and mathematics education is surrounded by different fronts, whose projects develop themselves in apparent different ways; yet, they are closely linked. In a comprising view of the universe of researches in history of mathematics, published in the most important international journals, it is evident that the investigation field is divided into the following great themes: history of the problems and of the concepts; history of the relations among mathematics, natural sciences and techniques; biographies; historical analysis of literary sources; institutional organizations. Over the last decade, scientific investigation has got new components that, although maintaining the hegemony of the mathematics produced in the western world, have entered the scientific investigation field, which has as a central theme mathematics as part of the human culture. Resulting from this theme, it is found the scientific investigation that aims at analyzing mathematics as part of the general training of the individual, and which opens way for the study of the history of the teaching of mathematics (Nobre, 2008, p. 129).

Thus, according to Nobre, in more recent times, turning to social issues, the historical study of mathematics incorporated some aspects linked to its teaching. This production is, therefore, linked to the development of the historical researches of mathematics.[3]

Taking the mathematics knowledge and its development in time, the issues linked to the teaching gain importance as questions arise about what the school ambit has done to the mathematics production. Despite this concern, a criticism that is possible to be done about this trend of opinion is the fact that it does not consider the school specificity of mathematics knowledge. Certainly, such perspective takes into account the differences between mathematical production and school mathematics. Nevertheless, such differences seem to be seen as a matter of adaptation of children and adolescents to the mathematics science. Taking the researches of André Chervel, about school subjects, it is possible to think that the trend of opinion conforms to the tradition of thinking the school knowledge as a vulgarization of all the knowledge taken as reference. To Chervel, however, the history of school subjects shows that:

> (…) the teaching contents are conceived as *sui generis* entities, typical of the school grade, independent, in a certain extent, from all the cultural realities outside the school, and enjoying an organization, of such an internal economy and efficacy that they do not seem to owe to anything but to themselves, that is, to their own history (Chervel, 1990, p. 180).

The emphasis of Chervel's studies given to the originality of the school knowledge, however, can lead to conclusions that are historically little acceptable. One of these conclusions is that school mathematics does not have any relation with mathematics. Thus, an interesting aspect that emerges from this trend of thinking, which takes the history of mathematics education as the history of mathematics, is the need to keep in sight the proximity of school mathematics with mathematics production. Hence, it is not extreme to think that school mathematics, a historically built product in the school environment, does not owe anything to the mathematics knowledge. This would roughly support itself as school culture survives, as

[3] This theoretical–methodological posture of considering history of mathematics education as inscribed in the history of mathematics has been shared by many Brazilian authors for a long time. It is worth mentioning for their representativeness the texts of Baroni (1999), Nobre and Baroni (1999), Brolezzi (2000), Meneghetti and Bicudo (2002) and, more recently, in the VII SNHM, works as Dynnikov and Sad (2007) and Baroni and Bianchi (2007).

reminds the historian Dominique Julia, from the pacific or conflicting relations that it maintains with other cultures throughout time. And, certainly, one of the most decisive relations maintained by school culture[4] in the ambit of mathematics teaching is the one established with the academic environment, with the academic culture.[5]

Anyway, according to the indications, for this trend of opinion, the centrality of the historical studies is given by mathematics (its concepts, problems, theories, mathematicians' biographies, etc.) and when the attention turns to its teaching, the higher education programs gain attention, the processes of institutionalization of mathematical knowledge. Little room is given to historical studies related to mathematics in elementary school.

In international ambit there are studies such as those from Bruno Belhoste (1998) that highlight the role of the influence of university level programs of study on the constitution itself and on the elaboration of mathematics knowledge. Nevertheless, as previously mentioned, such studies approach higher education programs and do not bring references to mathematics education in elementary school.

3 The history in mathematics education

This trend of research defines itself, initially, as opposed to other trends they mention. In this way, they consider the existence of autonomous fields, with the common concern of historical nature, highlighting the "History of mathematics itself", the "History of mathematics education" and the field of the "History in mathematics education" (Miguel & Miorim, 2004, p. 11). Without characterizing all these fields, the authors define only the last one—the History of mathematics education—considering the area of studies

> that take as object of investigation the problems related to the effective insertions of history in the initial or continued mathematics teachers education; in the mathematical training of students from no matter which levels; in mathematics books designated to teaching at whatever levels and time; in programs or official curricular proposals in the teaching of mathematics; in the investigation into mathematics education etc. (Miguel & Miorim, 2004, p. 11).

Thus, this trend of thinking the historical studies constitutes, as a matter of fact, a pedagogical field; or by other, a specificity of the pedagogical field that uses history as a privileged element in research studies about the teaching of mathematics.[6] Nevertheless, in the dialogue with other concepts about this pedagogical positioning, such trend expresses the idea of how it conceives its own history:

> On one aspect, between the extreme positions that try to convince us that history can do it all or that it cannot, it seems more appropriate to assume an intermediary position that believes that history—since duly constituted with aims that are explicitly pedagogical and organically articulated with the rest of the variables that act in the process of mathematics school teaching-learning—can and must constitute point of reference not only to the pedagogical set of problems but also to the qualitative transformation of school culture and school education and, more particularly yet, of the mathematics culture that circulates and of the mathematical education that promotes itself and takes place inside the school (Miguel & Miorim, 2004, pp. 151–152).

Thus, the use of history in mathematics education conditions it pedagogically, imposing that it be "duly constituted with explicitly pedagogical aims and organically articulated with the other variables that intervene in the school teaching–learning process of mathematics".

The works of Mendes et al. (2007) and Cyrino et al. (2007) can be considered as representative texts from this trend presented in the VII SNHM. The first group of authors used mathematics history texts referring to themes such as "numeric sets, equations and functions" because they considered them important for the future secondary level teacher. The paper describes the results of this experience concluding that "the historical investigation in the classroom showed to be a viable methodology" (2007, p. 254).

[4] *School culture*, according to the concept by the historian Dominique Julia, refers to "A set of *rules* that defines knowledge to be taught and proceedings to be followed, and a set of *practices* that allows the transmission of this knowledge and the incorporation of this behavior" (Julia, 2001, p. 10).

[5] Enlarging a little more the different environments along with which the school culture maintains relations, it will be possible to think about those ones maintained with the academic culture. *Academic culture* is a term created by Aparecida Duarte (2007), in her doctorate thesis, in which she studied the dynamics of the relations between mathematics and mathematics education, at the time of the MMM. She designates the specificities of the rules and practices that take place in the superior teaching of Mathematics.

[6] The reference of origin from this trend seems to be the creation of the *International Study Group on the relations between the history and pedagogy of mathematics* (*HPM*), group affiliated to the *International Commission on Mathematical Instruction* (ICMI), in 1983, in the city of Toronto (Canada). According to indications, the most recent international debate in the ambit of this trend of history of mathematics education can be analyzed from the Working Group 15 (WG 15) Theory and research on the role of history in mathematics education, created in the CERME 6—*Sixth conference of European research in mathematics education*, in Lyon, France—between 28 January and 1 February 2009.

In the second group of authors, coordinated by the teacher Márcia Cyrino, the title itself of the presented work is revealing: "History of mathematics as a didactic resource: experience with mathematics teachers" (2007, p. 259).

Beyond the use of the history of mathematics in the teachers' teaching and education, this trend also considers the role of history in the mathematics education in this education, from work experiences in teacher training courses. They, according to the representatives of this trend, revealed some dissatisfaction with the stricto sensu use of the history of mathematics in teacher's education. It could be noticed, by the teachers, an involvement much more associated to the new knowledge obtained through the study of the history of mathematics itself than with the perception of the pedagogical relevance of such a study for the exercise of the teaching profession" (Miguel & Miorim, 2004, p. 153). From this evidence, the trend of thinking "History in mathematics education" started to incorporate the history *of* mathematics education in its articulation with the history of mathematics, "…a field for a long time considered autonomous, established, with an expressive amount of publications and with a certain degree of institutional recognition."

Despite characterizing itself by the use of history in the mathematics education, this pedagogical perspective of thinking the historical contributions to the teaching and learning of mathematics intends to constitute a kind of orientation for the development of historical studies about the mathematics education. And it is exactly at this point that, precisely, it is found a trend that considers history of mathematics education from a differentiated perspective from other trends. The trend makes clear what must be significant in the historical production of mathematics education. In this sense, for the mathematics education, for the education of mathematics teachers, there must be a conditioning of history, mathematics history and mathematics education. And this conditioning implies in the production of a "history by a pedagogical vector". Thus,

> (…) so that they can be pedagogically convenient and interesting, we thought necessary that the histories of mathematics culture start, more and more, to be written under the point of view of the mathematician or, in other words, that *histories by a pedagogical vector* come to be, more and more, constituted (Miguel & Miorim, 2004, p. 156).

The aspiration of this concept is about thinking the "history of the mathematics culture" as an internal production of the mathematics education, "under the mathematics educator's point of view".[7]

To a certain extent, this perspective is not different from those of so many different scientific fields that mobilize themselves for the production of their own history. In this case, it is the mathematics education's turn to advocate for itself the representation of its past. By bidding that this production remains "under the point of view of the mathematics educator", this trend rejects the need of incursion in other domains, in particular, in the history of historians, to rescue from it a theoretical–methodological instrument for the analysis of the past of mathematics teaching. It disavows even if it is valid and "pedagogically interesting and convenient", the historical production of mathematics education by the historians. It will be necessary to produce history "under the point of view of the mathematics educator". Historically, this approach has already had its own place in History of Education itself while area of study. By its origin, the history of education was seen as an inseparable pair from pedagogy, the same way as history of philosophy was in relation to philosophy, or any history of any science had been in relation to itself (Warde and Carvalho, 2000). This analysis is ratified by Cláudia Alves (2003, p. 7) who illustrates as follows:

> Historians of education, in international ambit, have been trying to insert themselves into the historiographical debate and the last decades of the XX century have been marked by the fast expansion of our area of research, as part of the movement that shaped itself in a more general plan of historical production. This phenomenon gains recognition, especially, by the fact that, historically, the area remained conformed to a pattern that had been established in its origin. Born as a subject to be taught in the set recommended for teachers' education, the formative character imposed itself on the questioning aspect. The need for systematization associated to the moral and philosophical preoccupations that were present in the teaching aimed at the future masters, have built history of education with a strong normative trend, conforming, traditionalist, with few capacity of following the movements of renewal undertaken in the ambit of history.

This analysis leads us to consider the characteristics of the histories elaborated by biologists about biology, by philosophers about philosophy and more specifically, for

[7] We can find this perspective of treating history of mathematics education in many works from the teachers Antonio Miguel and Maria Ângela Miorim, researchers who incisively took the task of systematizing history in mathematics education. Besides them, there are several productions from other participating researchers from the research group that these authors belong to. Just to mention a sample of these studies, one could mention texts such as Miorim et al. (2002), Gomes (2002), Souza (2004).

the case, by mathematicians for mathematics. Considerations elaborated about the writing of the history of mathematics, by the mathematicians themselves, in the internal ambit of the mathematic production are revealing. In this case, the manifestation of Jean Dieudonné is emblematical:

> There are opinions that startle mathematicians; they are formulated by certain science historians. They do not consider the works on history of mathematics as sufficient, describing the ideas from the past and trying to understand the enchainment and the influences that they exert one over the others; it would also be necessary, according to them, "to explain" the reason why mathematicians chose such and such directions of investigation, and how they got to their results. I confess I do not understand what this possibly means: the activity of a creator brain never had a rational "explanation", inside mathematics or outside it (Dieudonné *apud* Valente, 2005, p. 24).

Dieudonné was, therefore, disturbed by the demands from historians. Under the protection of the structuralist conception, the edifying retrospective of mathematics deeds from the past should suffice to the mathematics field to justify how much of this scientific production from those times represented the maximum development of the mathematics knowledge. And, the history of historians was not appropriate to seal this stage. The convenient history for Dieudonné would be the one that would ratify the progress and be present in the way of thinking the past of mathematics. Thus, it seems to us that there is a parallel between these contentions of history of mathematics made by mathematicians from the trend "history in mathematics education" made "under the point of view of the mathematics educator". Both of them constitute attempts to condition the history to their immediate interests in the present. Moreover, a history that aims at justifying the present.

4 Oral history and mathematics education

The proposals of this trend can also be read in the *Proceedings* of the VII SNHM. In the recognition that the mathematics education must dialogue with different fields of knowledge, such perspective highlights the need to a "creative appropriation" in these fields. Thus, it ponders that

> This approach between areas has allowed us to have an appropriation (that I have preferred to call "creative appropriation") of tasks that end up constituting, in a dynamic way, curiously, in a practice that is distinct from those tasks in the other areas: it has been constituted in the way (or ways) of practicing historiography in our community of mathematics educators (Garnica, 2008, p. 80).

And, yet, regarding specifically history, this trend of knowledge production about history of mathematics education considers that:

> It is necessary to dialogue with the various available experiences about the way of writing history, about how to make use of this historiography for specific aims, so that we can carry on approaching our objects in a way that is more and more adequate, more and more particular, more and more "ours", because, even though, like our practices, our research objects can also dialogue with other areas, they have their particularities, and to us there is the role of understanding, supplied with the tools we find suitable and that must be evaluated, publicly and collectively as such (Garnica, 2008, p. 81).

Despite this availability to dialogue with different fields of knowledge, and the ways of writing history, what characterizes the works from this trend is the emphasis on oral history.[8] In a text from the *Proceedings* of the VII SNHM, one of their representatives, while making an inventory of the production of this perspective, highlights the researches that used oral history. Through it, the historical studies of mathematics education are made possible because of the treatment that is given to the mathematics teachers' statements:

> (…) those are documents that have been built according to a strict methodological procedure of validation, whose public tenor contains authorizations and cession letters, almost always registered in a Registry Office. Therefore, from the official character of such documents there is no room for doubt or questioning (Viana, 2008, p. 179).

In several texts published by this trend, it is recurrent the elaboration of an inventory of research works (master dissertations and doctoral thesis) that use oral history, in a privileged way, inside the research group where the trend is more visible. The same way, it also happened in a 2006 text written by Professor Antonio Garnica, called "Oral history and mathematics education: an inventory". Nevertheless, different from the references put in the *Proceedings* of the *VII SNHM*, the objectives of this perspective in the history of mathematics education become clearer in this last text. The collection, treatment and use of mathematics teachers' statements are at the service of a more ample task: "the

[8] Studies of this branch seem to be based on the works by Paul Thompson (1978) and Philippe Joutard (1983).

role that the oral history and the mathematics education interface can play concerning the training of mathematics teachers" (Garnica, 2006, p. 159). The concern with the education of future teachers translates the importance of the oral history:

> Oral history as methodology for qualitative research can, in this aspect, play a fundamental role on focusing subjects that are concrete and close to students' contexts (which allows students to notice that the practices treated are not in an abstract ambit that is distant and strange). Conceiving as elements of abstraction, pedagogical theories, didactic methods, philosophic, political and axiological aspects of education and mathematics education, the activities in oral history and mathematics education will be able to articulate, for example, the subjects classically known as "pedagogical subjects" to concrete situations, aiming at searching, throughout the initial training, the so-called theory-practice articulation. Besides, oral history allows a reconfiguration of the classical conception of history (including the destabilization of history as a "study from the past" and an instrument of hero making) (Garnica, 2006, p. 159).

Thus, the emphasis on the oral history has pedagogical goals. In some way, it is meant to show the mathematics teacher training course the existence of practices, through the collection of statements and their systematization. Such considerations seem to be problematic. Considering these intentions, students would be led to analyze pedagogical practices through the memory of these practices. Coherence among theories, memories and practices would be sought. In brief, this is about the problem of confusing memory and history.

The debate memory/history has constituted fundamental theme in the contemporary discussion about the task of historians. An emblematic example of this discussion can be found in n° 122 (2002), from the French journal *Le Débat* reunites texts from renowned intellectuals about the works of Paul Ricoeur, particularly, from the book *La Mémoire*, *l'Histoire*, *l'Oubli*, published in 2000. The intention of the special session in the journal, called "Autour de La Mémoire, l'Histoire, l'Oubli de Paul Ricoeur" was to promote a dialogue between historians and philosopher, a reader who is very attentive to the present historical production. The dialogue between historians and philosopher took into consideration, above all, relations between *history* and *memory*. In which sense *memory* changes the treatment of historical object? Which are the appropriate ways of considering this means of past knowledge, in the present, without being pleased in simply copying it like a dictation? Which challenges does the memorialist dimension truly bring to the critic work?

Abbreviating the long discussion presented in the Journal, it was the historian Roger Chartier's duty to ponder that, to historians, it remains the task of treating the memory as an object of any historical research: it will be necessary to analyze the ideological contents, their means of transmission, the places from where they are considered and their political and social uses. Experienced by the processes of fabrication from the past, historians will have to dissipate all the risks of confusing history—understood as a critical and controllable knowledge—and the reconstructions of memory, which maintains an affective, militating or manipulative relation with the past (Chartier, 2002, p. 8).

The pedagogical intentions of the trend "oral history and mathematics education", according to the indications, can be synthesized in the proposal to lead mathematics teacher training courses to perform the theory–practice articulation from the use of mathematics teachers' statements. For the history of mathematics education, specifically, there is room for the question: which representations from the practice of mathematics teaching from yore have been used by students for the understanding of the historical dimension of teachers' profession?

5 The history of mathematics education as history

The characterization of this trend of thinking the history of mathematics education can also be read in the *Proceedings* of the VII SNHM. It is the text by Professor Neuza Bertoni Pinto called "The cultural-historical making in mathematics education: the lessons from historians". As the title announces, the studies about the history of mathematics education are carried out from "historians' lessons". Following the contemporary debate about the historiography production, production about history of mathematics education might serve itself from this debate considering the fact that it is historical, which means, the way of producing history changes with time. This positioning will characterize what the author called "new history" of mathematics education. Thus,

> Disregarding the total idea of history, linked to "facts that are deprived-of-problems", the "new history" of mathematics education has been enlarging and providing new contours to the production, from fundamental concepts such as *cultural objects*, *subjects*, *practices*, *processes* and *patterns*. Historians teach that the starting point of what makes the historiographical operation is to know the historicity of the object. For such, it needs sources, such as written documents, witnesses of certain practices. They also teach that to build historical facts, it is necessary to question the sources, be able to put legitimate

> questions that allow making criticism about the documents; research issues that transform marks from the past in historical facts (Pinto, 2008, p. 124).

Differently from the previous trends, the "history of mathematics education as history" does not have as a prime objective, pedagogical issues of mathematics teaching. It recognizes that hardly ever would historians, lato sensu education historians, turn their attentions to the mathematics education. And this positioning is justifiable in the face of the extremely reduced presence of this research object in events concerning history of education. Thus, it is registered the necessity of mathematics historians to turn their faces to history making. Like that, the writing of the history of mathematics education, made by mathematics educators, needs that they make a dislocation: they should learn with contemporary historians the task of producing history.

> With the lessons from the historians, we learn that history is not a simple narrative from the past. For a historical practice to be legitimate it is necessary to know the control rules used by the community with which it dialogues. Historians teach us that without method, there is no historical research. By making the historiographical research, it is vital that the researcher be careful not to fall into the same epistemological obliquity that takes place with educational research, which takes the technique or the methodological proceedings as the method itself and ends up by impoverishing and hindering the construction of their object (Pinto, 2008, p. 125).

The history of mathematics education seen as a specificity of history, of history of education, does not have the pedagogical imperatives as a determining point in its production. The dialogue of this trend privileges the community that elaborates studies about history of education. This seems to constitute, however, one of its weakest points. By privileging the dialogue with the historical field, it has difficulties in getting recognition in the ambit of mathematics education. The production of this trend ends up being seen as something external to the field, a production that has an immense difficulty in being used in its own area. It will be this trend's duty, in the theoretical–methodological opposition with the others, to reveal that the representations it builds, about pedagogical practices of mathematics teachers from other times, are more convincing than those built under the need of their immediate use for didactic purposes.

6 Final considerations

The difficulty in the characterization of trends of research over the same theme is something that is not worth stepping back again. Any classification is restrictive and compelling. Since the beginning of this text this problem has been mentioned, specifically, referring to the scanning of different ways that parameter the Brazilian production of the history of mathematics education. The attempts performed originate in a great extent, from the analysis of what the researchers "say they do". Thus, there would be room for another work, longer yet, to investigate beyond what the researchers say about their research works. This points out to the analysis of the result of their productions based on their own texts, the monograph they coordinate and the articles resulting from thesis and dissertations from different groups of research. Anyway, even with the difficulties that are inherent to all classifications, it is possible to notice that the different tendencies, in the performed analysis, reveal several ways of thinking, concerning the way mathematics teachers should relate with the past of their profession.

From the first perspective—the history of mathematics education as mathematics history—the relation the teachers must have with the past links to mathematics knowledge, the mathematicians and their theories. Mathematics knowledge also plays a leading part in this relation when mathematics teaching is taken into consideration. What was taught in the past? Maybe this is the main question to be answered. The teaching activity itself seems not to have any importance in the research for this trend.

Relatively to the trend "history in mathematics", the past must be built by the pedagogical imperatives. The production of history of mathematics education must, in this case, be somehow pragmatic: it must serve didactic goals, be history "pedagogically interesting and convenient", "history by a pedagogical vector". This premise for historical production, certainly, leads to a fictional construction, once the past, evidently, does not have any commitment with the teaching of mathematics in the present.

As to "oral history and mathematics education", this perspective stresses the oral sources in such a way, working them, building "official documents", through the careful registration "even in a Registry Office", that the relation to be held with the past does not escape the memory. For this trend, it will be the sophisticated way of treating teachers' statements, of their related and systematized practices that must represent the past of the mathematics education. And this past, even recent, will have a decisive role in the education of mathematics teachers. Nevertheless, letting the memory represents the mathematics education from old times, there comes as a result a large amount of reports, of experiences reminded, with little theoretical strength to constitute knowledge, in a representation accepted as more convincing for the practices that were inherited and transformed in the present duty of mathematics teachers.

At last, the cast of trends shows the history of mathematics education seen as history. Therefore, as well as history itself, this trend is subjected to seal of an established community, theoretically and methodologically prepared to accept or reject the representations that are built about the past of education, and the mathematics education in Brazil. Their biggest challenge is convincing the field of mathematics education that the representations about the past of theories and practices of mathematics teaching must be elaborated considering "the lessons of historians".

The characterization and analysis of the trends of the Brazilian production in history of mathematics education, in a certain way, bring back a very up-to-date discussion about history.

For Roger Chartier, "the critical capacity of history does not lay limited to the inventory of the impostures about the past". History can and must establish objective criteria to accept or reject production that deals with the past. These observations, according to the historian, refer to the questions formulated or suggested by Paulo Ricoeur, among others: Which criteria must be accepted to disqualify certain speeches about the past and validate others? Should we report to the classical rules of the exercise of the historical criticism? On the other hand, is it legitimate to postulate a plurality of regimens of history proof, which would be required by the diversity of objects and historical methods? Or should we try harder to elaborate a theory of objectivity that would establish general criteria to permit the distinction between valid and invalid propositions?

Such issues, according to Chartier, have been repelled by certain historians, who consider them to be useless or even dangerous. But they play an essential role in the contemporary historical works, given the strong temptation and threat that we live when relating to the past, through imaginary or imagined histories. Thus, reflecting about the conditions that allow us to consider the historical speech as a representation and an adequate interpretation of the past reality is essential and urgent (Chartier, 2002, p. 10).

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